

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

---

10-9-1984

## Test 1543: Steiger Panther IV KM-325 Diesel 20-Speed

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

---

Museum, Tractor, "Test 1543: Steiger Panther IV KM-325 Diesel 20-Speed" (1984). *Nebraska Tractor Tests*. 1854.

<https://digitalcommons.unl.edu/tractormuseumlit/1854>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# NEBRASKA TRACTOR TEST 1543—STEIGER PANTHER IV KM-325 DIESEL 20 SPEED

## DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power — Two Hours 10th (3B) Gear											
276.11 (205.90)	15276 (67.95)	6.78 (10.91)	2100	3.63	17.209 (65.144)	0.435 (0.264)	16.04 (3.161)	182 (83.1)	61 (15.8)	65 (18.1)	29.08 (98.18)
75% of Pull at Maximum Power — Ten Hours 10th (3B) Gear											
229.31 (170.99)	11853 (52.73)	7.25 (11.67)	2224	2.73	15.501 (58.679)	0.471 (0.287)	14.79 (2.914)	181 (82.9)	62 (16.4)	64 (17.5)	28.81 (97.29)
50% of Pull at Maximum Power — Two Hours 10th (3B) Gear											
156.50 (116.70)	7902 (35.15)	7.43 (11.95)	2257	1.88	12.039 (45.574)	0.536 (0.326)	13.00 (2.561)	180 (82.2)	66 (18.6)	77 (24.7)	28.91 (97.61)
50% of Pull at Reduced Engine Speed — Two Hours 14th (4B) Gear											
156.52 (116.72)	7901 (35.15)	7.43 (11.96)	1366	1.80	9.781 (37.024)	0.436 (0.265)	16.00 (3.153)	182 (83.1)	64 (17.5)	73 (22.5)	28.89 (97.54)

## MAXIMUM POWER IN SELECTED GEARS

230.36 (171.78)	32565 (144.85)	2.65 (4.27)	2166	14.90	3rd (1C) Gear			180 (82.2)	42 (5.6)	45 (7.2)	28.46 (96.11)
251.55 (187.58)	31388 (139.62)	3.01 (4.84)	2100	11.81	4th (1D) Gear			180 (82.2)	42 (5.6)	45 (7.2)	28.47 (96.14)
268.17 (199.98)	28334 (126.04)	3.55 (5.71)	2099	8.34	5th (2A) Gear			181 (82.8)	60 (15.6)	63 (17.2)	28.97 (97.83)
273.85 (204.21)	25240 (112.27)	4.07 (6.55)	2099	6.79	6th (2B) Gear			181 (82.8)	60 (15.6)	64 (17.8)	28.97 (97.83)
274.17 (204.45)	21962 (97.69)	4.68 (7.53)	2099	5.51	7th (2C) Gear			182 (83.1)	61 (16.1)	66 (18.9)	28.97 (97.83)
275.16 (205.18)	19426 (86.41)	5.31 (8.55)	2097	4.66	8th (2D) Gear			183 (83.6)	63 (17.2)	69 (20.6)	28.96 (97.79)
282.43 (210.61)	17674 (78.62)	5.99 (9.64)	2100	4.11	9th (3A) Gear			183 (83.6)	64 (17.8)	71 (21.7)	28.97 (97.83)
285.67 (213.03)	15804 (70.30)	6.78 (10.91)	2100	3.55	10th (3B) Gear			184 (84.2)	65 (18.3)	73 (22.8)	28.99 (97.89)
282.55 (210.70)	13677 (60.84)	7.75 (12.47)	2099	3.15	11th (3C) Gear			182 (83.3)	65 (18.3)	73 (22.8)	28.98 (97.86)
280.77 (209.37)	12016 (53.45)	8.76 (14.10)	2097	2.58	12th (3D) Gear			182 (83.3)	64 (17.8)	72 (22.2)	28.98 (97.86)

## LUGGING ABILITY IN 10th (3B) GEAR

Crankshaft Speed rpm	2100	1880	1681	1464	1250	1042
Pull—lbs (kN)	15804 (70.30)	18412 (81.90)	20631 (91.77)	22890 (101.82)	23545 (104.73)	18487 (82.23)
Increase in Pull %	0	17	31	45	49	17
Power—Hp (kW)	285.67 (213.03)	295.86 (220.63)	294.04 (219.26)	281.54 (209.94)	246.09 (183.51)	164.19 (122.44)
Speed—Mph (km/h)	6.78 (10.91)	6.03 (9.70)	5.34 (8.60)	4.61 (7.42)	3.92 (6.31)	3.33 (5.36)
Slip %	3.55	4.42	5.05	5.97	6.42	4.58

TRACTOR SOUND LEVEL WITH CAB	1700 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	78.0	77.5	79.0
75% of Pull at Maximum Power—Ten Hours			79.0
50% of Pull at Maximum Power—Two Hours			78.5
50% of Pull at Reduced Engine Speed—Two Hours			76.5
Bystander in 18th (5B) gear			104.0

Department of Agricultural Engineering

Dates of Test: October 9 to 16, 1984

Manufacturer: STEIGER TRACTOR, INC., 406  
Main Avenue, Fargo, North Dakota 58126

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel  
Cetane No. 46.8 (rating taken from oil company's  
inspection data) **Specific gravity converted to 60/  
60°F (15/15°C)** 0.8375 **Fuel weight** 6.973 lbs/gal  
(0.836 kg/l) **Oil** SAE 10W-30 **API service clas-  
sification** SE-SF, CC-CD **To motor** 8.256 gal  
(31.251 l) **Drained from motor** 7.409 gal (28.048 l)  
**Transmission and hydraulic lubricant** SAE 10  
hydraulic oil **Final drive lubricant** SAE 80W-90  
**Total time engine was operated** 47.5 hours.

**ENGINE:** Make Cummins Diesel **Type** six cyl-  
inder vertical with turbocharger and intercooler  
**Serial No.** 18107122 **Crankshaft** lengthwise **Rated  
rpm** 1700 to 2100 **Bore and stroke** 5.5" × 6.0"  
(139.7 mm × 152.4 mm) **Compression ratio** 14.1  
to 1 **Displacement** 855 cu in (14011 ml) **Starting  
system** 12 volt **Lubrication pressure** **Air cleaner**  
two paper elements and aspirator **Oil filter** one  
full flow cartridge and one bypass cartridge **Oil  
cooler** engine coolant heat exchanger for crank-  
case oil, radiator for hydraulic oil, radiator for  
transmission and transfer case oil **Fuel filter** two  
paper cartridges **Muffler** none **Cooling medium  
temperature control** one thermostat.

**CHASSIS:** **Type** four wheel drive with duals  
**Serial No.** 107-03838 **Tread width** rear 79" (2007  
mm) to 136.3" (3462 mm) front 79" (2007 mm) to  
136.3" (3462 mm) **Wheel base** 129" (3277 mm)  
**Center of gravity** (without operator or ballast, with  
minimum tread, with fuel tank filled and tractor  
serviced for operation) Horizontal distance for-  
ward from center-line of rear wheels 77.9" (1978  
mm) Vertical distance above roadway 45.5" (1156  
mm) Horizontal distance from center of rear wheel  
tread 0" (0 mm) to the right/left **Hydraulic control  
system** direct engine drive **Transmission** selective  
gear fixed ratio **Advised speeds mph (km/h)**  
first 2.3 (3.7) second 2.6 (4.2) third 3.0 (4.8) fourth  
3.4 (5.5) fifth 3.8 (6.1) sixth 4.3 (6.9) seventh 4.9  
(7.9) eighth 5.5 (8.8) ninth 6.1 (9.8) tenth 7.0 (11.3)  
eleventh 7.8 (12.5) twelfth 8.9 (14.3) thirteenth 10.2  
(16.4) fourteenth 11.5 (18.5) fifteenth 13.0 (20.9)  
sixteenth 14.8 (23.8) seventeenth 15.8 (25.4) eight-  
eenth 18.0 (29.0) nineteenth 20.3 (32.7) twentieth  
23.1 (37.2) reverse 2.3 (3.7), 2.6 (4.2), 3.0 (4.8), 3.4  
(5.5) **Clutch** dual dry disc hydraulically operated  
by foot pedal **Brakes** dual caliper, single disc hy-  
draulically actuated by foot pedal **Steering** hy-  
drostatic and articulated **Turning radius** (on  
concrete surface without brake) right 283" (7.19  
m) left 288" (7.32 m) **Turning space diameter** (on  
concrete surface without brake) right 590" (14.99  
m) left 600" (15.24 m) **Power take-off** none **Un-  
laden tractor mass** 29580 lb (13417 kg).

## DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
<b>Maximum Available Power — Two Hours 10th (3B) Gear</b>											
291.87 (217.65)	17987 (80.01)	6.09 (9.79)	1899	4.30	17.396 (65.850)	0.416 (0.253)	16.78 (3.305)	184 (84.2)	64 (17.5)	71 (21.4)	29.03 (98.03)
<b>MAXIMUM POWER IN SELECTED GEARS</b>											
247.31 (184.42)	32507 (144.60)	2.85 (4.59)	2063	14.71			4th (1D) Gear	180 (82.2)	42 (5.6)	46 (7.8)	28.50 (96.24)
259.80 (193.73)	32237 (143.40)	3.02 (4.86)	1902	13.96			5th (2A) Gear	180 (82.2)	42 (5.6)	45 (7.2)	28.48 (96.17)
277.51 (206.94)	28968 (128.85)	3.59 (5.78)	1901	9.05			6th (2B) Gear	182 (83.3)	61 (16.1)	65 (18.3)	28.97 (97.83)
280.73 (209.34)	25161 (111.92)	4.18 (6.73)	1904	6.87			7th (2C) Gear	182 (83.3)	62 (16.7)	67 (19.4)	28.97 (97.83)
286.10 (213.34)	22532 (100.23)	4.76 (7.66)	1901	5.81			8th (2D) Gear	183 (83.9)	63 (17.2)	70 (21.1)	28.96 (97.79)
291.07 (217.05)	20303 (90.31)	5.38 (8.65)	1902	4.81			9th (3A) Gear	183 (83.9)	64 (17.8)	71 (21.7)	28.97 (97.83)
299.30 (223.19)	18426 (81.96)	6.09 (9.80)	1901	4.34			10th (3B) Gear	184 (84.4)	65 (18.3)	73 (22.8)	28.99 (97.89)
296.85 (221.36)	15973 (71.05)	6.97 (11.22)	1900	3.63			11th (3C) Gear	183 (83.9)	64 (17.8)	72 (22.2)	28.98 (97.86)
296.58 (221.16)	14071 (62.59)	7.90 (12.72)	1902	3.07			12th (3D) Gear	184 (84.2)	64 (17.8)	72 (22.2)	28.98 (97.86)
293.86 (219.13)	12109 (53.86)	9.10 (14.65)	1900	2.58			13th (4A) Gear	183 (83.9)	64 (17.8)	72 (22.2)	28.97 (97.83)

## DRAWBAR PERFORMANCE AT 1700 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
<b>Maximum Available Power — Two Hours 10th (3B) Gear</b>											
289.58 (215.94)	20122 (89.51)	5.40 (8.68)	1700	5.28	16.757 (63.434)	0.404 (0.245)	17.28 (3.404)	182 (83.1)	45 (7.2)	51 (10.6)	28.59 (96.54)
<b>MAXIMUM POWER IN SELECTED GEARS</b>											
263.43 (196.44)	32700 (145.46)	3.02 (4.86)	1697	14.34			6th (2B) Gear	182 (83.1)	43 (6.1)	47 (8.3)	28.52 (96.31)
274.21 (204.48)	28016 (124.62)	3.67 (5.91)	1702	8.77			7th (2C) Gear	182 (83.3)	62 (16.7)	68 (20.0)	28.96 (97.79)
282.41 (210.59)	25169 (111.96)	4.21 (6.77)	1701	7.02			8th (2D) Gear	184 (84.2)	64 (17.8)	72 (22.2)	28.96 (97.79)
290.89 (216.92)	22930 (102.00)	4.76 (7.66)	1700	5.97			9th (3A) Gear	185 (84.7)	64 (17.8)	71 (21.7)	28.97 (97.83)
298.04 (222.25)	20673 (91.96)	5.41 (8.70)	1700	5.12			10th (3B) Gear	185 (85.0)	65 (18.3)	73 (22.8)	28.98 (97.86)
296.55 (221.14)	17932 (79.77)	6.20 (9.98)	1701	4.26			11th (3C) Gear	185 (84.7)	64 (17.8)	72 (22.2)	28.98 (97.86)
298.41 (222.52)	15899 (70.72)	7.04 (11.33)	1701	3.63			12th (3D) Gear	185 (84.7)	64 (17.8)	72 (22.2)	28.98 (97.86)
297.32 (221.71)	13742 (61.13)	8.11 (13.06)	1701	2.99			13th (4A) Gear	185 (85.0)	64 (17.8)	71 (21.7)	28.97 (97.83)

### TIRES, BALLAST AND WEIGHT

Rear Tires		With Ballast		Without Ballast	
—No., Size, ply & psi (kPa)		Four 23.1-34; 8; inner 14 (95) outer 12 (85)		Four 23.1-34; 8; inner 14 (95) outer 12 (85)	
Ballast		1258 lb (570 kg)		None	
—Liquid (each inner)		None		None	
—Cast Iron (each)		None		None	
Front Tires		Four 23.1-34; 8; inner 14 (95) outer 12 (85)		Four 23.1-34; 8; inner 14 (95) outer 12 (85)	
Ballast		720 lb (327 kg)		None	
—Liquid (each inner)		None		None	
—Cast Iron (each)		None		None	
Height of Drawbar		18 in (455 mm)		18 in (455 mm)	
Static Weight with Operator		14315 lb (6493 kg)		11800 lb (5352 kg)	
—Rear		19400 lb (8800 kg)		17960 lb (8147 kg)	
—Front		33715 lb (15293 kg)		29760 lb (13499 kg)	
—Total					

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 122°F (50.0°C). Ten gears were chosen between 15% slip and 10 mph (16.1 km/h). The engine oil pressure gauge did not function properly during drawbar tests.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1543**, December 3, 1984.

LOUIS I. LEVITICUS  
Engineer-in-Charge

K. VON BARGEN  
W. E. SPLINTER  
L. L. BASHFORD  
Board of Tractor Test Engineers

### THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2300	15860
Location	remote	
Hydraulic oil temperature °F (°C)	129	54
Location	hydraulic reservoir	

	Maximum Lift Capacity	Lift Capacity for Transport
QUICK ATTACH	yes	
CATEGORY	III	*not measured
LOAD lbs (kg)	12752	5784
TIME sec	3.47	

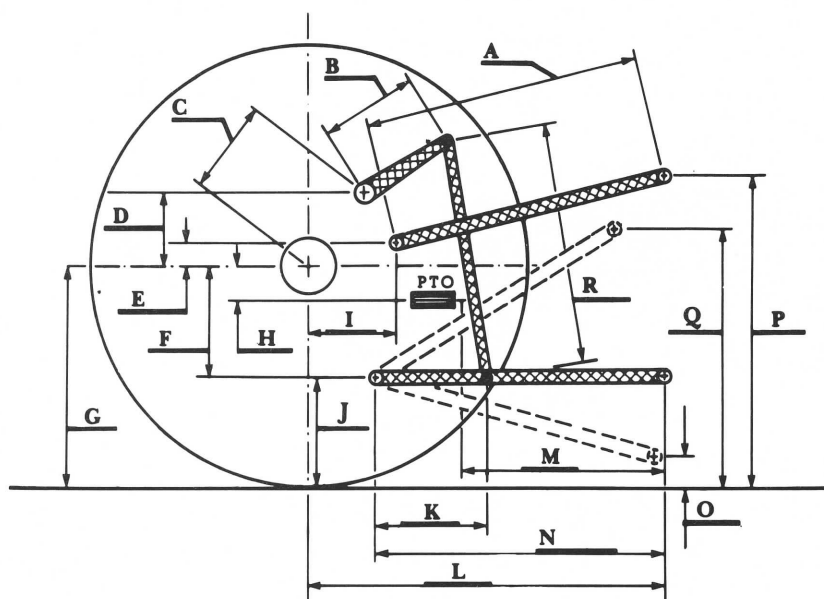
#### HITCH POINT MOVEMENT in (mm)

Lowest position	14.9	378
Top of timed range	40.9	1038
Highest position	41.4	1051

#### LOAD CG MOVEMENT in (mm)

Lowest position	14.5	368
Top of timed range	43.4	1102
Highest position	44.0	1118

\*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.4	797
B	15.0	381
C	26.8	681
D	22.3	566
E	5.7	145
F	13.5	343
G	32.1	816
H	NA	NA
I	18.1	460
J	18.6	473
K	15.0	381
L	50.1	1273
L'	56.6	1438
M	NA	NA
N	32.0	813
O	8.0	203
P	40.6	1032
Q	35.8	908
R	34.5	876

L' to end of quick attach



**Steiger Panther IV KM-325 Diesel**

**The Agricultural Experiment Station  
Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln  
Irvin T. Omtvedt, Dean and Director**